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Medicine for Managers

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Migraine

Migraine is complex and one of the most common complaints in medicine. In the UK it affects about six million people and it is estimated to affect one billion people worldwide. 190,000 people a day have a migraine. It affects more women than men and is most common between the ages of 25 and 55. For most sufferers, it is characterised by a number of debilitating symptoms, which commonly result in absence from work.

Migraine comes from the Greek word "*hemikrania"* meaning [pain in] half the head. (hēmi) 'half' and (krānion) 'skull'. An early reference occurs in the Ebers papyrus of 1500 BC. Hippocrates described the one sided pain with a visual aura.

No effective treatment was identified until the discovery of the Ergot fungus, from which ergotamine was isolated in about 1916.

Migraine produces a throbbing headache which lasts for 4-72 hours, though some individuals may feel tired and lethargic for up to seven days after an episode. The migraine displays two or more of:

- Being unilateral
- Having a pulsatile nature
- Being moderate to severe intensity
- Causing avoidance of routine activity such as walking or climbing stairs.

In addition, patients experience:

- Nausea and/or vomiting
- Photophobia, phonophobia or osmophobia – heightened sensitivity to light sound or odours

Prior to the development of a migraine, people may suffer:

- Weariness and excessive yawning
- Mood changes (depression, anger, euphoria)
- Food cravings or anorexia
- Excessive thirst and more frequent urination (polyuria)
- The development of cravings
- Diarrhoea or constipation

Food additives may precipitate migraine including:

- Caffeine
- Saccharin
- Tyramine (as in mature cheese)
- Citrus fruits

Weather changes are amongst the most common triggers and may occur in over half of patients.
Magnesium deficiency has also been associated with migraine. Magnesium occurs in Brazil nuts, cashews, almonds and walnuts.

Aura

People may get warning signs that a migraine is about to occur. Such signs, called an aura, include:

- Visual zigzag lines, flashing lights or blind spots
- Dizziness and disorientation
- Numbness or tingling in the shoulders or limbs
- Difficulty in speaking

The aura does not last longer than one hour.

Classification

Migraine is classified according to the presence of an aura:

- Migraine without aura (giving no warning signs)
- Migraine with aura (occurring in about one third of patients)
- Aura symptoms but no actual headache (silent migraine)

Women are affected three times more commonly than men (about one in four women and one in twelve men). On average they result in about ten days' absence a year from work. A GP normally sees about five new cases a year and, on average, does about forty consultations for patients with existing migraine.

Mechanism

The cause of migraine is not fully understood. The mechanism by which the headache itself starts is a sudden dilatation of the blood vessels surrounding the brain.

In patients who have an aura, this is preceded by a narrowing of the vessels. The modern view is that neurotransmitters (the chemicals transmitting impulses between nerves) are involved and, in particular, blood levels of the chemical serotonin are known to fall in migraine.

Diagnosis

Migraine can often be diagnosed simply on the history of migrainous changes together with a normal neurological examination.

It is important, with the first attack, to distinguish it from other disorders which might display similar symptoms of pain, weakness, visual changes and photophobia, such as meningitis or a stroke.

With repeated attacks, the pattern and symptoms normally make recognition relatively straightforward. If the patient is referred to a specialist, the neurologist may refer the patient for neuroimaging if:

- The headaches are severe or worsening
- The pattern of migraine changes
- They develop over age 50
- The neurological examination identifies abnormalities including confusion, stiff neck or swelling of the optic nerve at the back of the eye (papilloedema)
- Atypical features, such as fever, develop
- They are resistant to treatment

MRI scanning with a contrast is preferred to a CT scan because it is more sensitive and does not require any radiation.

Management

There is no cure for migraine. However, there are effective treatments. For some people simply retreating to a dark room and lying down eases the symptoms but, for most, more active treatment may be necessary.

Simple painkillers may be effective and paracetamol, aspirin or non-steroidal anti-inflammatory drugs such as ibuprofen (e.g. *Nurofen*) may give a good response. For those who suffer from nausea or vomiting an anti-emetic is also helpful and drugs such as metoclopramide (*Maxolon*),domperidone (*Motilium*) or prochlorperazine (Stemetil) may relieve the symptom.

Some medication combines analgesic drugs such as paracetamol, codeine and metoclopramide (e.g. *Migraleve yellow*). In general, it is better to avoid opioids such as codeine because they are addictive.

As with all treatments, taking the medication during the aura stage (which can be taken as a warning of impending headache) often reduces or even eliminates the headache if the drug has had time to work before the migraine comes on.

Other medication is available to ease symptoms. ***Triptans*** are drugs which bind to receptors in the brain controlling arteries which dilate during migraine attacks.

They are usually available as tablets, and also available as nasal sprays, wafers that melt on the tongue, and also as injections. The commonly used ones include naratriptan and rizatriptan. Overuse may result in *overuse headaches*.

A newer type of medication is the ***Gepants***. These drugs block the action of a protein which causes inflammation, transmission of pain and dilated blood vessels in the brain.

Currently only one, rimegepant, is available on NHS prescription for treatment of migraine. Because they have a different mode of action, they may succeed if triptans fail. They are normally prescribed by specialist neurologists.

Although many people manage their migraine symptoms by timely and efficient treatment using the sort of medication outlined above, others may use preventive treatments.

These are for people who have more than five days' migraine a month or where acute medication is not very effective.

These treatments often have other uses and include:

- Topiramate and valproate, also having an anticonvulsant effect
- Propranolol, atenolol and timolol, which are beta blockers also used in blood pressure treatment and heart disease
- Lisinopril and candesartan, which are used in high blood pressure and heart failure
- Pizotifen, also used in treatment of depression
- Amitriptyline also used in treatment of depression

These groups of drugs are available on prescription, but some may have contra-

indications in females of child-bearing age or if pregnancy is a risk.

Migraine treatment has improved significantly.

Newer drugs provide significant advances for patients who previously found little to ease their symptoms, or in whom the side effects were too troublesome.

Migraine attacks can now be better managed especially with use of medication early on, but unfortunately there is still no cure for migraine.

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